SEQUENCE LISTING

<110> Innoventus Project AB

<120> An endogenous peptide, and active subfragments thereof

<130> PD53577PC01

<150> SE0301988-2
<151> 2003-07-07

<150> US60/485,185
<151> 2003-07-07

<160> 28

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 35
<212> PRT
<213> human

<400> 1
Asp Leu His Pro His Lys His His Ser His Glu Gln His Pro His Gly
1 5 10 15
His His Pro His Ala His His Pro His Glu His Asp Thr His Arg Gln
20 25 30
His Pro His
35

<210> 2
<211> 151
<212> PRT
<213> human

<400> 2
His Leu Gly His Pro Phe His Trp Gly Gly His Glu Arg Ser Ser Thr
1 5 10 15
Thr Lys Pro Pro Phe Lys Pro His Gly Ser Arg Asp His His His Pro
20 25 30
His Lys Pro His Glu His Gly Pro Pro Pro Pro Pro Asp Glu Arg Asp
35 40 45
His Ser His Gly Pro Pro Leu Pro Gln Gly Pro Pro Pro Leu Leu Pro
50 55 60
Met Ser Cys Ser Ser Cys Gln His Ala Thr Phe Gly Thr Asn Gly Ala
65 70 75 80
Gln Arg His Ser His Asn Asn Asn Ser Ser Asp Leu His Pro His Lys
85 90 95
His His Ser His Glu Gln His Pro His Gly His His Pro His Ala His
100 105 110
His Pro His Glu His Asp Thr His Arg Gln His Pro His Gly His His
115 120 125
Pro His Gly His His Pro His Gly His His Pro His Gly His His Pro
130 135 140
His Gly His His Pro His Cys
145 150

<210> 3
<211> 507
<212> PRT
<213> human

<400> 3

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Val Ser Pro Thr Asp Cys Ser Ala Val Glu Pro Glu Ala Glu Lys Ala
 1               5                  10                  15
Leu Asp Leu Ile Asn Lys Arg Arg Arg Asp Gly Tyr Leu Phe Gln Leu
            20                  25                  30
Leu Arg Ile Ala Asp Ala His Leu Asp Arg Val Glu Asn Thr Thr Val
        35                  40                  45
Tyr Tyr Leu Val Leu Asp Val Gln Glu Ser Asp Cys Ser Val Leu Ser
    50                  55                  60
Arg Lys Tyr Trp Asn Asp Cys Glu Pro Pro Asp Ser Arg Arg Pro Ser
65                  70                  75                  80
Glu Ile Val Ile Gly Gln Cys Lys Val Ile Ala Thr Arg His Ser His
                85                  90                  95
Glu Ser Gln Asp Leu Arg Val Ile Asp Phe Asn Cys Thr Thr Ser Ser
            100                 105                 110
Val Ser Ser Ala Leu Ala Asn Thr Lys Asp Ser Pro Val Leu Ile Asp
        115                 120                 125
Phe Phe Glu Asp Thr Glu Arg Tyr Arg Lys Gln Ala Asn Lys Ala Leu
    130                 135                 140
Glu Lys Tyr Lys Glu Glu Asn Asp Asp Phe Ala Ser Phe Arg Val Asp
145                 150                 155                 160
Arg Ile Glu Arg Val Ala Arg Val Arg Gly Gly Glu Gly Thr Gly Tyr
                165                 170                 175
Phe Val Asp Phe Ser Val Arg Asn Cys Pro Arg His His Phe Pro Arg
            180                 185                 190
His Pro Asn Val Phe Gly Phe Cys Arg Ala Asp Leu Phe Tyr Asp Val
        195                 200                 205
Glu Ala Leu Asp Leu Glu Ser Pro Lys Asn Leu Val Ile Asn Cys Glu
    210                 215                 220
Val Phe Asp Pro Gln Glu His Glu Asn Ile Asn Gly Val Pro Pro His
225                 230                 235                 240
Leu Gly His Pro Phe His Trp Gly Gly His Glu Arg Ser Ser Thr Thr
                245                 250                 255
Lys Pro Pro Phe Lys Pro His Gly Ser Arg Asp His His His Pro His
            260                 265                 270
Lys Pro His Glu His Gly Pro Pro Pro Pro Pro Asp Glu Arg Asp His
        275                 280                 285
Ser His Gly Pro Pro Leu Pro Gln Gly Pro Pro Pro Leu Leu Pro Met
    290                 295                 300
Ser Cys Ser Ser Cys Gln His Ala Thr Phe Gly Thr Asn Gly Ala Gln
305                 310                 315                 320
Arg His Ser His Asn Asn Asn Ser Ser Asp Leu His Pro His Lys His
                325                 330                 335
His Ser His Glu Gln His Pro His Gly His His Pro His Ala His His
            340                 345                 350
Pro His Glu His Asp Thr His Arg Gln His Pro His Gly His His Pro
        355                 360                 365
His Gly His His Pro His Gly His His Pro His Gly His His Pro His
    370                 375                 380
Gly His His Pro His Cys His Asp Phe Gln Asp Tyr Gly Pro Cys Asp
385                 390                 395                 400
Pro Pro Pro His Asn Gln Gly His Cys Cys His Gly His Gly Pro Pro
                405                 410                 415
Pro Gly His Leu Arg Arg Arg Gly Pro Gly Lys Gly Pro Arg Pro Phe
```

```
            420                 425                 430
His Cys Arg Gln Ile Gly Ser Val Tyr Arg Leu Pro Pro Leu Arg Lys
        435                 440                 445
Gly Glu Val Leu Pro Leu Pro Glu Ala Asn Phe Pro Ser Phe Pro Leu
    450                 455                 460
Pro His His Lys His Pro Leu Lys Pro Asp Asn Gln Pro Phe Pro Gln
465                 470                 475                 480
Ser Val Ser Glu Ser Cys Pro Gly Lys Phe Lys Ser Gly Phe Pro Gln
                485                 490                 495
Val Ser Met Phe Phe Thr His Thr Phe Pro Lys
            500                 505
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<210> 4
<211> 25
<212> PRT
<213> human

<400> 4

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Gly His His Pro His Gly His His Pro His Gly His His Pro His Gly
 1               5                  10                  15
His His Pro His Gly His His Pro His
            20                  25
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<210> 5
<211> 25
<212> PRT
<213> human

<400> 5

```
His His His His His His His His His His His His His His His His
 1               5                  10                  15
His His His His His His His His His
            20                  25
```

<210> 6
<211> 240
<212> PRT
<213> human

<400> 6

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Val Ser Pro Thr Asp Cys Ser Ala Val Glu Pro Glu Ala Glu Lys Ala
 1               5                  10                  15
Leu Asp Leu Ile Asn Lys Arg Arg Arg Asp Gly Tyr Leu Phe Gln Leu
            20                  25                  30
Leu Arg Ile Ala Asp Ala His Leu Asp Arg Val Glu Asn Thr Thr Val
        35                  40                  45
Tyr Tyr Leu Val Leu Asp Val Gln Glu Ser Asp Cys Ser Val Leu Ser
    50                  55                  60
Arg Lys Tyr Trp Asn Asp Cys Glu Pro Pro Asp Ser Arg Arg Pro Ser
65                  70                  75                  80
Glu Ile Val Ile Gly Gln Cys Lys Val Ile Ala Thr Arg His Ser His
                85                  90                  95
Glu Ser Gln Asp Leu Arg Val Ile Asp Phe Asn Cys Thr Thr Ser Ser
            100                 105                 110
Val Ser Ser Ala Leu Ala Asn Thr Lys Asp Ser Pro Val Leu Ile Asp
        115                 120                 125
Phe Phe Glu Asp Thr Glu Arg Tyr Arg Lys Gln Ala Asn Lys Ala Leu
    130                 135                 140
```

```
Glu Lys Tyr Lys Glu Glu Asn Asp Asp Phe Ala Ser Phe Arg Val Asp
145                 150                 155                 160
Arg Ile Glu Arg Val Ala Arg Val Arg Gly Gly Glu Gly Thr Gly Tyr
                165                 170                 175
Phe Val Asp Phe Ser Val Arg Asn Cys Pro Arg His His Phe Pro Arg
            180                 185                 190
His Pro Asn Val Phe Gly Phe Cys Arg Ala Asp Leu Phe Tyr Asp Val
        195                 200                 205
Glu Ala Leu Asp Leu Glu Ser Pro Lys Asn Leu Val Ile Asn Cys Glu
    210                 215                 220
Val Phe Asp Pro Gln Glu His Glu Asn Ile Asn Gly Val Pro Pro His
225                 230                 235                 240
```

<210> 7
<211> 320
<212> PRT
<213> human

<400> 7

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Val Ser Pro Thr Asp Cys Ser Ala Val Glu Pro Glu Ala Glu Lys Ala
 1               5                  10                  15
Leu Asp Leu Ile Asn Lys Arg Arg Arg Asp Gly Tyr Leu Phe Gln Leu
            20                  25                  30
Leu Arg Ile Ala Asp Ala His Leu Asp Arg Val Glu Asn Thr Thr Val
        35                  40                  45
Tyr Tyr Leu Val Leu Asp Val Gln Glu Ser Asp Cys Ser Val Leu Ser
    50                  55                  60
Arg Lys Tyr Trp Asn Asp Cys Glu Pro Pro Asp Ser Arg Arg Pro Ser
65                  70                  75                  80
Glu Ile Val Ile Gly Gln Cys Lys Val Ile Ala Thr Arg His Ser His
                85                  90                  95
Glu Ser Gln Asp Leu Arg Val Ile Asp Phe Asn Cys Thr Thr Ser Ser
            100                 105                 110
Val Ser Ser Ala Leu Ala Asn Thr Lys Asp Ser Pro Val Leu Ile Asp
        115                 120                 125
Phe Phe Glu Asp Thr Glu Arg Tyr Arg Lys Gln Ala Asn Lys Ala Leu
    130                 135                 140
Glu Lys Tyr Lys Glu Glu Asn Asp Asp Phe Ala Ser Phe Arg Val Asp
145                 150                 155                 160
Arg Ile Glu Arg Val Ala Arg Val Arg Gly Gly Glu Gly Thr Gly Tyr
                165                 170                 175
Phe Val Asp Phe Ser Val Arg Asn Cys Pro Arg His His Phe Pro Arg
            180                 185                 190
His Pro Asn Val Phe Gly Phe Cys Arg Ala Asp Leu Phe Tyr Asp Val
        195                 200                 205
Glu Ala Leu Asp Leu Glu Ser Pro Lys Asn Leu Val Ile Asn Cys Glu
    210                 215                 220
Val Phe Asp Pro Gln Glu His Glu Asn Ile Asn Gly Val Pro Pro His
225                 230                 235                 240
Leu Gly His Pro Phe His Trp Gly Gly His Glu Arg Ser Ser Thr Thr
                245                 250                 255
Lys Pro Pro Phe Lys Pro His Gly Ser Arg Asp His His His Pro His
            260                 265                 270
Lys Pro His Glu His Gly Pro Pro Pro Pro Pro Asp Glu Arg Asp His
        275                 280                 285
Ser His Gly Pro Pro Leu Pro Gln Gly Pro Pro Pro Leu Leu Pro Met
    290                 295                 300
Ser Cys Ser Ser Cys Gln His Ala Thr Phe Gly Thr Asn Gly Ala Gln
305                 310                 315                 320
```

<210> 8
<211> 390
<212> PRT
<213> human

<400> 8

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Val Ser Pro Thr Asp Cys Ser Ala Val Glu Pro Glu Ala Glu Lys Ala
 1               5                  10                  15
Leu Asp Leu Ile Asn Lys Arg Arg Arg Asp Gly Tyr Leu Phe Gln Leu
            20                  25                  30
Leu Arg Ile Ala Asp Ala His Leu Asp Arg Val Glu Asn Thr Thr Val
        35                  40                  45
Tyr Tyr Leu Val Leu Asp Val Gln Glu Ser Asp Cys Ser Val Leu Ser
    50                  55                  60
Arg Lys Tyr Trp Asn Asp Cys Glu Pro Pro Asp Ser Arg Arg Pro Ser
65                  70                  75                  80
Glu Ile Val Ile Gly Gln Cys Lys Val Ile Ala Thr Arg His Ser His
                85                  90                  95
Glu Ser Gln Asp Leu Arg Val Ile Asp Phe Asn Cys Thr Thr Ser Ser
            100                 105                 110
Val Ser Ser Ala Leu Ala Asn Thr Lys Asp Ser Pro Val Leu Ile Asp
        115                 120                 125
Phe Phe Glu Asp Thr Glu Arg Tyr Arg Lys Gln Ala Asn Lys Ala Leu
    130                 135                 140
Glu Lys Tyr Lys Glu Glu Asn Asp Asp Phe Ala Ser Phe Arg Val Asp
145                 150                 155                 160
Arg Ile Glu Arg Val Ala Arg Val Arg Gly Gly Glu Gly Thr Gly Tyr
                165                 170                 175
Phe Val Asp Phe Ser Val Arg Asn Cys Pro Arg His His Phe Pro Arg
            180                 185                 190
His Pro Asn Val Phe Gly Phe Cys Arg Ala Asp Leu Phe Tyr Asp Val
        195                 200                 205
Glu Ala Leu Asp Leu Glu Ser Pro Lys Asn Leu Val Ile Asn Cys Glu
    210                 215                 220
Val Phe Asp Pro Gln Glu His Glu Asn Ile Asn Gly Val Pro Pro His
225                 230                 235                 240
Leu Gly His Pro Phe His Trp Gly Gly His Glu Arg Ser Ser Thr Thr
                245                 250                 255
Lys Pro Pro Phe Lys Pro His Gly Ser Arg Asp His His His Pro His
            260                 265                 270
Lys Pro His Glu His Gly Pro Pro Pro Pro Pro Asp Glu Arg Asp His
        275                 280                 285
Ser His Gly Pro Pro Leu Pro Gln Gly Pro Pro Pro Leu Leu Pro Met
    290                 295                 300
Ser Cys Ser Ser Cys Gln His Ala Thr Phe Gly Thr Asn Gly Ala Gln
305                 310                 315                 320
Arg His Ser His Asn Asn Asn Ser Ser Asp Leu His Pro His Lys His
                325                 330                 335
His Ser His Glu Gln His Pro His Gly His His Pro His Ala His His
            340                 345                 350
Pro His Glu His Asp Thr His Arg Gln His Pro His Gly His His Pro
        355                 360                 365
His Gly His His Pro His Gly His His Pro His Gly His His Pro His
    370                 375                 380
Gly His His Pro His Cys
385                 390
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<210> 9
<211> 151
<212> PRT
<213> human

<400> 9
His Leu Gly His Pro Phe His Trp Gly Gly His Glu Arg Ser Ser Thr
1 5 10 15
Thr Lys Pro Pro Phe Lys Pro His Gly Ser Arg Asp His His His Pro
20 25 30
His Lys Pro His Glu His Gly Pro Pro Pro Pro Pro Asp Glu Arg Asp
35 40 45
His Ser His Gly Pro Pro Leu Pro Gln Gly Pro Pro Pro Leu Leu Pro
50 55 60
Met Ser Cys Ser Ser Cys Gln His Ala Thr Phe Gly Thr Asn Gly Ala
65 70 75 80
Gln Arg His Ser His Asn Asn Asn Ser Ser Asp Leu His Pro His Lys
85 90 95
His His Ser His Glu Gln His Pro His Gly His His Pro His Ala His
100 105 110
His Pro His Glu His Asp Thr His Arg Gln His Pro His Gly His His
115 120 125
Pro His Gly His His Pro His Gly His His Pro His Gly His His Pro
130 135 140
His Gly His His Pro His Cys
145 150

<210> 10
<211> 25
<212> PRT
<213> human

<400> 10
Cys His Asp Phe Gln Asp Tyr Gly Pro Cys Asp Pro Pro Pro His Asn
1 5 10 15
Gln Gly His Cys Cys His Gly His Gly
20 25

<210> 11
<211> 26
<212> PRT
<213> human

<400> 11
Gly Pro Pro Pro Gly His Leu Arg Arg Arg Gly Pro Gly Lys Gly Pro
1 5 10 15
Arg Pro Phe His Cys Arg Gln Ile Gly Ser
20 25

<210> 12
<211> 36
<212> PRT
<213> human

<400> 12
Val Tyr Arg Leu Pro Pro Leu Arg Lys Gly Glu Val Leu Pro Leu Pro
1 5 10 15
Glu Ala Asn Phe Pro Ser Phe Pro Leu Pro His His Lys His Pro Leu
20 25 30
Lys Pro Asp Asn
35

<210> 13
<211> 32
<212> PRT
<213> human

<400> 13
Gln Pro Phe Pro Gln Ser Val Ser Glu Ser Cys Pro Gly Lys Phe Lys
1 5 10 15
Ser Gly Phe Pro Gln Val Ser Met Phe Phe Thr His Thr Phe Pro Lys
20 25 30

<210> 14
<211> 525
<212> PRT
<213> human

<400> 14
Met Lys Ala Leu Ile Ala Ala Leu Leu Leu Ile Thr Leu Gln Tyr Ser
1 5 10 15
Cys Ala Val Ser Pro Thr Asp Cys Ser Ala Val Glu Pro Glu Ala Glu
20 25 30
Lys Ala Leu Asp Leu Ile Asn Lys Arg Arg Arg Asp Gly Tyr Leu Phe
35 40 45
Gln Leu Leu Arg Ile Ala Asp Ala His Leu Asp Arg Val Glu Asn Thr
50 55 60
Thr Val Tyr Tyr Leu Val Leu Asp Val Gln Glu Ser Asp Cys Ser Val
65 70 75 80
Leu Ser Arg Lys Tyr Trp Asn Asp Cys Glu Pro Pro Asp Ser Arg Arg
85 90 95
Pro Ser Glu Ile Val Ile Gly Gln Cys Lys Val Ile Ala Thr Arg His
100 105 110
Ser His Glu Ser Gln Asp Leu Arg Val Ile Asp Phe Asn Cys Thr Thr
115 120 125
Ser Ser Val Ser Ser Ala Leu Ala Asn Thr Lys Asp Ser Pro Val Leu
130 135 140
Ile Asp Phe Phe Glu Asp Thr Glu Arg Tyr Arg Lys Gln Ala Asn Lys
145 150 155 160
Ala Leu Glu Lys Tyr Lys Glu Glu Asn Asp Asp Phe Ala Ser Phe Arg
165 170 175
Val Asp Arg Ile Glu Arg Val Ala Arg Val Arg Gly Gly Glu Gly Thr
180 185 190
Gly Tyr Phe Val Asp Phe Ser Val Arg Asn Cys Pro Arg His His Phe
195 200 205
Pro Arg His Pro Asn Val Phe Gly Phe Cys Arg Ala Asp Leu Phe Tyr
210 215 220
Asp Val Glu Ala Leu Asp Leu Glu Ser Pro Lys Asn Leu Val Ile Asn

```
225                 230                 235                 240
Cys Glu Val Phe Asp Pro Gln Glu His Glu Asn Ile Asn Gly Val Pro
                245                 250                 255
Pro His Leu Gly His Pro Phe His Trp Gly Gly His Glu Arg Ser Ser
            260                 265                 270
Thr Thr Lys Pro Pro Phe Lys Pro His Gly Ser Arg Asp His His His
        275                 280                 285
Pro His Lys Pro His Glu His Gly Pro Pro Pro Pro Pro Asp Glu Arg
    290                 295                 300
Asp His Ser His Gly Pro Pro Leu Pro Gln Gly Pro Pro Pro Leu Leu
305                 310                 315                 320
Pro Met Ser Cys Ser Ser Cys Gln His Ala Thr Phe Gly Thr Asn Gly
                325                 330                 335
Ala Gln Arg His Ser His Asn Asn Asn Ser Ser Asp Leu His Pro His
            340                 345                 350
Lys His His Ser His Glu Gln His Pro His Gly His His Pro His Ala
        355                 360                 365
His His Pro His Glu His Asp Thr His Arg Gln His Pro His Gly His
    370                 375                 380
His Pro His Gly His His Pro His Gly His His Pro His Gly His His
385                 390                 395                 400
Pro His Gly His His Pro His Cys His Asp Phe Gln Asp Tyr Gly Pro
                405                 410                 415
Cys Asp Pro Pro Pro His Asn Gln Gly His Cys Cys His Gly His Gly
            420                 425                 430
Pro Pro Pro Gly His Leu Arg Arg Arg Gly Pro Gly Lys Gly Pro Arg
        435                 440                 445
Pro Phe His Cys Arg Gln Ile Gly Ser Val Tyr Arg Leu Pro Pro Leu
    450                 455                 460
Arg Lys Gly Glu Val Leu Pro Leu Pro Glu Ala Asn Phe Pro Ser Phe
465                 470                 475                 480
Pro Leu Pro His His Lys His Pro Leu Lys Pro Asp Asn Gln Pro Phe
                485                 490                 495
Pro Gln Ser Val Ser Glu Ser Cys Pro Gly Lys Phe Lys Ser Gly Phe
            500                 505                 510
Pro Gln Val Ser Met Phe Phe Thr His Thr Phe Pro Lys
        515                 520                 525
```

<210> 15
<211> 16
<212> PRT
<213> human

<400> 15

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Asp Leu His Pro His Lys His His Ser His Glu Gln His Pro His Gly
 1               5                  10                  15
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<210> 16
<211> 26
<212> PRT
<213> human

<220>
<223> additional G residue (residue 16) not part of human HRGP

<400> 16
Lys His His Ser His Glu Gln His Pro His Gly His His Pro His Ala
1 5 10 15
His His Pro His Glu His Asp Thr His Gly
20 25

<210> 17
<211> 25
<212> PRT
<213> human

<400> 17
Lys His His Ser His Glu Gln His Pro His Gly His His Pro His Ala
1 5 10 15
His His Pro His Glu His Asp Thr His
20 25

<210> 18
<211> 16
<212> PRT
<213> human

<400> 18
Ala His His Pro His Glu His Asp Thr His Arg Gln His Pro His Gly
1 5 10 15

<210> 19
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Non-consecutive fragment residues 330-334, 340-344, 355-359 of human HRGP + additional residue G (residue 16) in C terminal

<400> 19
Asp Leu His Pro His Glu Gln His Pro His Glu His Asp Thr His Gly
1 5 10 15

<210> 20
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Sequence comprises residues 330-334, 340-344, 355-359 of mature human HRGP

<400> 20
Asp Leu His Pro His Glu Gln His Pro His Glu His Asp Thr His
1 5 10 15

<210> 21
<211> 15
<212> PRT
<213> human

<220>
<221> ACETYLATION
<222> (1)...(1)

<221> AMIDATION
<222> (15)...(15)

<400> 21
Ala His His Pro His Glu His Asp Thr His Arg Gln His Pro His
1 5 10 15

<210> 22
<211> 15
<212> PRT
<213> human

<400> 22
Ala His His Pro His Glu His Asp Thr His Arg Gln His Pro His
1 5 10 15

<210> 23
<211> 10
<212> PRT
<213> human

<220>
<221> ACETYLATION
<222> (1)...(1)

<221> AMIDATION
<222> (10)...(10)

<400> 23
Ala His His Pro His Glu His Asp Thr His
1 5 10

<210> 24
<211> 10
<212> PRT
<213> human

<400> 24
Ala His His Pro His Glu His Asp Thr His
1 5 10

<210> 25
<211> 5
<212> PRT
<213> human

<220>
<221> ACETYLATION
<222> (1)...(1)

<221> AMIDATION
<222> (5)...(5)

<400> 25
Ala His His Pro His
1 5

<210> 26
<211> 5
<212> PRT
<213> human

<400> 26
Ala His His Pro His
1 5

<210> 27
<211> 5
<212> PRT
<213> human

<220>
<221> ACETYLATION
<222> (1)...(1)

<221> AMIDATION
<222> (5)...(5)

<400> 27
Glu His Asp Thr His
1 5

<210> 28
<211> 5
<212> PRT
<213> human

<400> 28
Glu His Asp Thr His
1 5